

To: Kappelman, David[Kappelman.David@epa.gov]; Ruhl, Christopher[Ruhl.Christopher@epa.gov]
From: Ostrander, David
Sent: Mon 8/31/2015 4:28:33 PM
Subject: FW: working hypothesis on blue/green colored water

From: Spence, Sandra
Sent: Wednesday, August 19, 2015 7:26 AM
To: Ostrander, David
Cc: Hermann, Karl; Pierce, Maggie; Wall, Dan; Keteles, Kristen
Subject: Re: working hypothesis on blue/green colored water

Here's what I would say instead...

We believe the blue green color in the upper stretches of the Animas and Cement Creek likely is a result of the fluctuating oxidation states of iron and other metals as they are exposed to oxygen and proceed through the neutralization process. Iron, for example, is a blue green color in its reduced form and converts to an orange color as it is oxidized. Hence, color changes and a green color in particular are often associated with acidic mine drainage. We are collecting samples today to confirm. In addition we will be testing for algae in these locations as well as further downstream.

Sent from my iPhone

On Aug 19, 2015, at 7:10 AM, Ostrander, David <Ostrander.David@epa.gov> wrote:

I would like to have a brief statement for Shaun for the County Commissioners meeting this morning at 8:30. Here is my attempt at a simple explanation. Please let me know if this is not accurate, but recognize I can't really make it more technically complex. Please respond ASAP.

The blue/green color seen in the Animas River is likely due to iron sulfate in a low oxygen state as opposed to iron oxide which gives the reddish color to river water. These are natural variations in water chemistry and don't reflect any changes in metal concentrations. Cement Creek and the Upper Animas both currently exhibit this blue/green coloration. EPA has collected samples to analyze and verify this hypothesis as well as testing for

chlorophyll/algae in the water.